

Serial No.: 10/823,674
Docket No.: 102-1024
Amendment After Final dated October 29, 2010
Reply to the Final Office Action of September 1, 2010

REMARKS

Introduction

Upon entry of the foregoing amendment, claims 1-18 and 21 are pending in the application. Claims 17 and 18 have been amended. Claims 19 and 20 have been canceled without prejudice or disclaimer. Claims 1-16 have been allowed as stated by the Examiner on pages 5-6 of the Office Action. No new matter is being presented. In view of the following remarks, reconsideration and allowance of all the pending claims are requested.

Entry of this Amendment After Final is proper under 37 C.F.R. §1.116 because the claim amendments: (a) place this application in condition for allowance (for the reasons discussed herein), (b) do not raise any new issues requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution as indicated in the Final Office Action), (c) present the rejected claims in better form for consideration on appeal (should an appeal be necessary), and (d) are necessary and were not earlier presented because they are made in response to arguments raised in the Final Office Action.

Accordingly, for at least the reasons discussed above, entry of this Amendment is respectfully requested.

Rejection under 35 USC § 103

Claims 17, 18, 20, 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. "New Frame Rate Up-Conversion Using Bi-Directional Motion Estimation," I.E.E.E. Transactions on Consumer Electronics, Vol. 46, No. 3, (hereinafter, "Choi") in view of Heising et al., "Wavelet-based Very Low Bit Rate Video Coding Using Image Warping and Overlapped Block Motion Compensation" I.E.E.E. Proceedings: Vision, Image and Signal Processing, Vol. 148, No. 2, April 2001, (hereinafter, "Heising"). In view of the following remarks, reconsideration and allowance of these claims are earnestly solicited.

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Claim 17

Referring to independent claim 17, in the Office Action dated March 4, 2010, the Examiner alleges that Choi and Heising in combination with one another disclose all the limitations recited in independent claim 17. In particular, on page 5 of the Office Action, the Examiner alleges that Heising discloses that:

the selecting the discontinuous areas comprises analyzing a deviate between motion vectors of a current block and peripheral blocks (Heising, see formula 4; Heising, page 95, lines 29-37 on the right hand side).

However, it is respectfully submitted that Choi and Heising, whether taken alone or in combination with one another, fail to teach or suggest all of the features as recited in independent claim 17, for at least the following reasons.

Referring to formula 4 and page 95, lines 29-37 of Heising as relied upon by the Examiner, Heising describes that to “force the estimation” of “smooth vector fields,” a “Langrangian multiplier” is used to “choose the best control point motion vector” considering the “prediction error” and the “location motion vector variance” between the “candidate vector” and “eight motion vectors” of its “neighboring control points.” Heising describes that the “decision whether to use warping prediction or OBMC for a block” is also based on formula 4. That is, Heising describes that a “Langrangian multiplier” is used to “choose the best control point motion vector” when considering the “prediction error” and the “location motion vector variance” between the “candidate vector” and “eight motion vectors” of its “neighboring control points,” not “selecting ... discontinuous areas” by “comparing a deviation” between “motion vectors” of a “current block” and “peripheral blocks,” and “outputting a final interpolation pixel.” Applicants submit that Heising describes “choos[ing] the best control point motion vector,” not “selecting” a “discontinuous” area by “comparing a deviation” between “motion vectors” of a “current block” and “peripheral blocks.”

On page 6 of the Office Action, the Examiner acknowledges and Applicants agree that Choi and Heising in combination with one another do not disclose, teach, or suggest “comparing a deviation of the motion vectors of the current and peripheral blocks, and ... output[ing] the selected final interpolation pixel.” Applicants submit that as independent claim 17 presently

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recites, among other things, “comparing a deviation between motion vectors of a current block and peripheral blocks,” and “outputting a final interpolation pixel,” claim 17 is patentably distinguishable from Choi and Heising, whether taken alone or in combination with one another.

Therefore, Choi and Heising, whether taken alone or in combination with one another, do not teach or suggest, among other things, that “the selecting of the discontinuous areas includes comparing a deviation between motion vectors of a current block and peripheral blocks, and outputting a final interpolation pixel” as presently recited in independent claim 17.

Since Choi and Heising, whether taken alone or in combination with one another, do not teach or suggest each of the features as recited in claim 17, claim 17 is patentably distinguishable and deemed to be allowable.

Accordingly, withdrawal of this rejection and allowance of this claim are earnestly solicited.

Claims 18, 20, and 21

Applicants have canceled claim 20 without prejudice or disclaimer.

With regard to claims 18 and 21, it is requested that for at least the reasons that these claims depend from allowable independent claim 17, and therefore contain each of the features as recited in claim 17, claims 18 and 21 are also patentable over Choi and Heising, whether taken alone or in combination with one another.

Accordingly, withdrawal of these rejections and allowance of these claims are earnestly solicited.

Examiner’s Response to Arguments

In the Remarks above, Applicants address the Examiner’s response to arguments recited on page 2 of the Office Action, as well as the rejections recited on pages 3-5 of the Office Action. Reconsideration and allowance of the pending claims in view of the above remarks is earnestly solicited.

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Conclusion

It is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, there being no other objections or rejections, this application is in condition for allowance, and a notice to this effect is earnestly solicited.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

If any further fees are required in connection with the filing of this amendment, please charge the same to our Deposit Account No. 502827.

Respectfully submitted,

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